

## IN THE CLAIMS

*Please amend claims 1, 2, 8, 12, 13, 22, 23, 27, and 29, and cancel claims 3-7, 9, 14-17, 20, 24-26, and 28, as follows:*

1. (Currently Amended) A spin valve sensor for a magnetic head, comprising:

a free layer structure;

an antiparallel (AP) self-pinned layer structure;

a non-magnetic electrically conductive spacer layer in between the free layer structure and the AP self-pinned layer structure;

the AP self-pinned layer structure being pinned by its magnetostriction and air bearing surface (ABS) stress without any antiferromagnetic (AFM) layer being utilized for pinning;

the AP self-pinned layer structure including:

a first AP pinned layer comprising a cobalt-iron layer;

a second AP pinned layer comprising a cobalt layer and including no iron content;

the second AP pinned layer being in closer proximity to the free layer structure than the first AP pinned layer; and

an antiparallel coupling (APC) layer formed between the first and the second AP pinned layers;~~and~~

~~at least one of the first and the second AP pinned layers comprising a cobalt layer and including no iron content.~~

2. (Currently Amended) The spin valve sensor of claim 1, wherein the ~~at least one~~ second AP pinned layer comprising the cobalt layer consists of cobalt.

3-7. (Canceled)

8. (Currently Amended) The spin valve sensor of claim 1, wherein a the magnetostriction which self-pins the AP self-pinned layer structure is increased from use of the cobalt layer.

9. (Canceled)

10. (Original) The spin valve sensor of claim 1, wherein a magnetostriction of the first and the second AP pinned layers and a magnetoresistive coefficient of the spin valve sensor are increased from use of the cobalt layer.

11. (Original) The spin valve sensor of claim 1, further comprising:  
a seed layer which includes a layer of platinum-manganese (PtMn) with a thickness less than 75 Angstroms.

12. (Currently Amended) A disk drive, comprising:  
a housing;  
a magnetic disk rotatably supported in the housing;  
a magnetic head assembly;  
a support mounted in the housing for supporting the magnetic head assembly so as to be in a transducing relationship with the magnetic disk;  
a spindle motor for rotating the magnetic disk;  
an actuator positioning means connected to the support for moving the magnetic head assembly to multiple positions with respect to said magnetic disk;  
a processor connected to the magnetic head assembly, to the spindle motor, and to the actuator for exchanging signals with the magnetic head assembly for controlling movement of the magnetic disk and for controlling the position of the magnetic head assembly;  
the magnetic head assembly including a read head;

the read head including a spin valve sensor comprising:

- a free layer structure;

- an antiparallel (AP) self-pinned layer structure;

- a non-magnetic electrically conductive spacer layer in between the free layer structure and the AP self-pinned layer structure;

- the AP self-pinned layer structure being pinned by its magnetostriction and air bearing surface (ABS) stress without any antiferromagnetic (AFM) layer being utilized for pinning;

- the AP self-pinned layer structure including:

  - a first AP pinned layer comprising a cobalt-iron layer;

  - a second AP pinned layer comprising a cobalt layer and including no iron content;

  - the second AP pinned layer being in closer proximity to the free layer structure than the first AP pinned layer; and

  - an antiparallel coupling (APC) layer formed between the first and the second AP pinned layer; ~~and~~

  - ~~at least one of the first and the second AP pinned layers comprising a cobalt layer and including no iron content.~~

13. (Currently Amended) The disk drive of claim 12, wherein ~~the at least one of the first and the second AP pinned layers~~ layer comprising the cobalt layer consists of cobalt.

14-17. (Canceled)

18. (Original) The disk drive of claim 12, wherein the free layer structure comprises a cobalt-iron layer.

19. (Original) The disk drive of claim 12, wherein a magnetostriction which self-pins the AP self-pinned layer structure is increased from use of the cobalt layer.

20. (Canceled)

21. (Original) The disk drive of claim 12, wherein the spin valve sensor further comprises:

a seed layer which includes a layer of platinum-manganese (PtMn) with a thickness less than 75 Angstroms.

22. (Currently Amended) The disk drive of claim 12, wherein a the magnetostriction of the first and the second AP pinned layers and a magnetoresistive coefficient of the spin valve sensor are increased from use of the cobalt layer.

23. (Currently Amended) A method of making a spin valve sensor for a magnetic head, comprising:

forming a free layer structure and an antiparallel (AP) self-pinned layer structure which are separated by a non-magnetic electrically conductive spacer layer, the AP self-pinned layer structure being pinned by its magnetostriction and air bearing surface (ABS) stress without any antiferromagnetic (AFM) layer being utilized for pinning; and

forming the AP self-pinned layer structure with a first AP pinned layer comprising a cobalt-iron layer, a second AP pinned layer comprising a cobalt layer and including no iron content, and an antiparallel coupling (APC) layer between the first and the second AP pinned layers, the second AP pinned layer being in closer proximity to the free layer structure than the first AP pinned layer; and

~~wherein at least one of the first and the second AP pinned layers consists of a cobalt layer having no iron content, which increases a magnetostriction of the AP self-pinned layer structure for improved self pinning.~~

24-26. (Canceled)

27. (Currently Amended) The method of claim 23, wherein the second AP pinned layer is being formed with the cobalt layer having no iron content and the first AP pinned layer structure is being formed with cobalt-iron, ~~which~~ increases a magnetoresistive coefficient  $\Delta r/R$  of the spin valve sensor.

28. (Canceled)

29. (Currently Amended) The method of claim 23, wherein ~~an antiferromagnetic (AFM) layer is not formed for pinning the AP self-pinned layer structure~~ the second AP pinned layer being formed with the cobalt layer having no iron content increases the magnetostriction of the AP self-pinned layer structure for improved self-pinning.

30. (Original) The method of claim 23, wherein the free layer structure is formed with cobalt-iron.